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EXAMINER	
THOMPSON, JAMES A	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/668,459	OZAWA, SHUJI	
	Examiner	Art Unit	
	James A Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-12* is/are allowed.

6)☒ Claim(s) *1-3,5-7 and 9* is/are rejected.

7)☒ Claim(s) *4 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Examiner has noted that the amendments to claim 8 overcome the objection on formal grounds raised in item 3 of the previous office action, dated 04 October 2004. The objection to claim 8 in item 3 of said previous office action has therefore been withdrawn.

2. Applicant's arguments filed 15 February 2005 have been fully considered but they are not persuasive.

Regarding page 8, lines 5-9 and page 10, lines 17-18: Examiner agrees that independent claims 10, 11 and 12 remain in condition for allowance and that the amendments made to claims 10, 11 and 12 were made merely to express the invention recited in claims 10, 11 and 12 better. Further, claims 4 and 8 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding page 8, line 10 to page 10, line 23: Examiner agrees with Applicant that Alves (US Patent 5,093,869), Takahashi (US Patent 5,923,822), and Kitaya (US Patent 4,975,860) do not specifically teach the limitations that the detection means and pixel count detection means recited in claim 1, and similar features recited in claims 5 and 9, do not perform their respective detections by interpreting the print object through an intermediate language. However, these limitations are newly amended limitations to the claims. As such, they are discussed in detail below with the other rejections based on the prior art.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5-7 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Alves (US Patent 5,093,869) in view of Takahashi (US Patent 5,923,822), Kitaya (US Patent 4,975,860), and Vyncke (US Patent 5,926,185).

Regarding claims 1, 5 and 9: Alves discloses an image processing apparatus (figure 2 of Alves) comprising detection means (figure 2(33) of Alves) for detecting whether or not an object is a gradient fill object having gradation in a horizontal or vertical direction (figure 3d and column 4, lines 22-25 of Alves). The directional lines shown in figure 3d of Alves are formed by the gradient based segmentation processor (said detection means)(figure 2(33) of Alves) (column 4, lines 22-25 of Alves). Said directional lines show the direction, whether horizontal, vertical or otherwise, of the gradient which fills the object (column 4, lines 58-60 of Alves), thus dividing the image into segments (column 4, lines 28-36 of Alves).

Alves further discloses pixel count detection means (figure 2(32) of Alves) the detecting a number of pixels which have gradation with defined range (column 4, lines 26-30 of Alves). The different regions are detected and segmented according to gradient directions (figure 3d of Alves) and areas of intensity

(figure 3e of Alves) (column 4, lines 23-30 of Alves). The gradation is within a certain range owing to the segmentation based on intensity flat regions (column 4, lines 42-45 of Alves). The level of homogeneity required defines the range since every pixel of a region will not be exactly the same owing to the shading effects due to the relative orientation of the sun (column 4, lines 5-9 of Alves). Furthermore, the number of pixels that are detected are consecutively present in a direction perpendicular to the direction of gradation detected by said detection means (figure 3d; figure 3e; and column 4, lines 50-58 of Alves). Segmenting the image into regions (flat linking) and region growth processing (column 4, lines 39-45 and lines 61-65 of Alves) inherently require the number of pixels since the different regions are divided into specified areas of pixels.

Alves does not disclose expressly that said detecting means performs detection by interpreting the print object; said pixel count detection means detects, by interpreting the print object, a number of pixels which have substantially the same gray level value; drawing means for drawing at least one pixel for different gray level values in the direction of gradation, based on the coordinate data and gray level value of the gradient fill object; and replication means for replicating, in the direction perpendicular to the direction of gradation, the pixels drawn by said drawing means in a number equal to the number of pixels detected by said pixel count detection means, thus making said apparatus capable of drawing said gradient fill object.

Takahashi discloses replication means (figure 4(8) of Takahashi) for replicating, in the direction perpendicular to the direction of a rainbow pattern (as clearly shown in figure

5b and figure 5e of Takahashi), pixels in number equal to the number of pixels detected by said pixel count detection means with color of a start pixel located at a start position of the pixels (figure 5e; and column 6, lines 5-13 and lines 37-39 of Takahashi). Said replication means (figure 4(8) of Takahashi) performs the editing of the figures (column 6, lines 37-39 of Takahashi), said editing creating rainbow patterns in areas of the original image (figures 5a-5f and column 6, lines 46-55 of Takahashi). Said editing requires replication of values since said rainbow patterns are replicated and drawn over blank image regions (figure 5e and column 10, lines 5-12 of Takahashi), thus inherently requiring that the pixels of the replicated rainbow stripe are the same number as the pixels in the blank image region over which they are drawn. Since the rainbow pattern is in parallel lines (figures 5a-5f and column 6, lines 5-8 of Takahashi), then the pixels of substantially same gray level values are replicated perpendicular to the direction of the rainbow pattern.

Alves and Takahashi are combinable because they are from the same field of endeavor, namely image formation and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a replication means for replicating the values of a pattern in certain regions with an equal number of pixels of substantially same gray level values in a direction perpendicular to the pattern direction, as taught by Takahashi. Said patterns would therefore be the gradation patterns stored for graph matching (column 3, lines 49-59 of Alves), as taught by Alves, and said pixel count detection means would detect a number of pixels which have substantially the same gray level value, like the

patterns specifically taught by Takahashi. Alves teaches specifically that the gradation is within a certain range owing to the segmentation based on intensity flat regions (column 4, lines 42-45 of Alves). Applying the teachings of Takahashi would specifically limit said range to pixels that are substantially the same gray level value. Said certain regions would be the various regions of the captured image, as taught by Alves. The motivation for doing so would have been to recreate the image with the stored pattern (column 6, lines 31-39 of Takahashi) since the captured image pattern does not exactly correspond with the pattern that is stored (column 3, lines 54-59 of Alves). Therefore, it would have been obvious to combine Takahashi with Alves.

Alves in view of Takahashi does not disclose expressly that said detecting means performs detection by interpreting the print object; said pixel count detection means perform detection by interpreting the print object; and drawing means for drawing at least one pixel for different gray level values in the direction of gradation, based on the coordinate data and gray level value of the gradient fill object, thus making said apparatus capable of drawing said gradient fill object.

Kitaya discloses drawing means (figure 1(31) of Kitaya) for drawing at least one pixel (column 3, lines 27-29 of Kitaya) for difference gray level values in the direction of gradation (figure 3(6) and column 2, lines 52-57 of Kitaya), based on the coordinate data and gray level value of a gradient fill object (column 3, line 66 to column 4, line 4 of Kitaya). Since the gray level values of the gradient fill object (figure 3(6) of Kitaya) are continuously changed towards the center (column 2, lines 52-57 of Kitaya) and the dots forming said gradient fill

object are placed based on coordinates calculated from the associated normal line functions (column 3, line 66 to column 4, line 4 of Kitaya), the gray level values and coordinate values are functionally related to one another. Therefore, said drawing occurs based on both the coordinate data and the gray level values.

Alves in view of Takahashi is combinable with Kitaya because they are from the same field of endeavor, namely image formation and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the drawing means of Kitaya to repeatedly draw a gradation pattern in a gradient fill object. The motivation for doing so would have been to be able to automatically and quickly produce a specifically desired dot pattern (column 1, lines 61-67 of Kitaya). Therefore, it would have been obvious to combine Kitaya with Alves in view of Takahashi.

Alves in view of Takahashi and Kitaya does not disclose expressly that said detecting means performs detection by interpreting the print object; and said pixel count detection means perform detection by interpreting the print object.

Vyncke discloses that a page description language (PDL) is interpreted to generate a variety of information, such as vectors, splines, continuous tones, position, color, size, object groupings, and relationship of objects to one another (column 4, lines 13-19 of Vyncke) and a database of objects based on the interpreted page description language (column 4, lines 22-26 of Vyncke).

Alves in view of Takahashi and Kitaya are combinable with Vyncke because they are from the same field of endeavor, namely image formation and processing. At the time of the invention,

it would have been obvious to a person of ordinary skill in the art to format the image in a page description language format. Thus, said detection means and said pixel count detection means would each perform their particular detection by interpreting the print object, specifically interpreting a page description language file of the print object. The suggestion for doing so would have been that page description language files are commonly used in printing (column 1, lines 17-21 of Vyncke) and that page description language files allow for editing of the image within a structured format (column 1, lines 22-30 of Vyncke). Therefore, it would have been obvious to combine Vyncke with Alves in view of Takahashi and Kitaya to obtain the invention as specified in claims 1, 5 and 9.

Regarding claims 2 and 6: Alves discloses using gray level values (column 4, lines 8-12 of Alves), obtained by gray level calculation for all pixels of a first row of a gradient fill object (column 3, lines 54-59 and column 4, lines 5-12 of Alves). The various parts of the structure are illuminated, resulting in gray scale values (column 4, lines 5-12 of Alves). Structures are also stored in memory for comparison (column 3, lines 54-59 of Alves). The parts of the structures are identified based on the different intensities of the associated pixels (column 4, lines 8-9 of Alves). Therefore, the corresponding gray level values from the stored data are derived from the calculations for all pixels of the gradient fill object, since calculations are necessary in order to perform a comparison (column 3, lines 54-63 of Alves). The gradation occurs in a variety of directions, depending upon the relative orientation of the sun (column 4, lines 5-8 of Alves). This

would include the horizontal direction, such as for certain oblique incidences upon a side wall of a building.

Alves does not disclose expressly that said replication means copies said gray level values in number equal to the detected number of pixels.

Takahashi discloses that said replication means copies rainbow pattern pixel values in number equal to the detected number of pixels (figure 5e and column 10, lines 5-12 of Takahashi). Rainbow pixel values are replicated in selected blank regions (figure 5e and column 10, lines 5-12 of Takahashi) for every row and column of pixels (figure 5e and column 7, lines 27-35 of Takahashi).

Alves and Takahashi are combinable because they are from the same field of endeavor, namely image formation and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to replicate pixels of a pattern in number equal to the detected number of pixels in each row, as taught by Takahashi, said pattern being a gradation pattern, as taught by Alves. The motivation for doing so would have been to recreate the image with the stored pattern (column 6, lines 31-39 of Takahashi) since the captured image pattern does not exactly correspond with the pattern that is stored (column 3, lines 54-59 of Alves). Therefore, it would have been obvious to combine Takahashi with Alves to obtain the invention as specified in claims 2 and 6.

Regarding claims 3 and 7: Alves discloses using gray level values (column 4, lines 8-12 of Alves), obtained by gray level calculation for all pixels of a first row of a gradient fill object (column 3, lines 54-59 and column 4, lines 5-12 of Alves). The various parts of the structure are illuminated,

resulting in gray scale values (column 4, lines 5-12 of Alves). Structures are also stored in memory for comparison (column 3, lines 54-59 of Alves). The parts of the structures are identified based on the different intensities of the associated pixels (column 4, lines 8-9 of Alves). Therefore, the corresponding gray level values from the stored data are derived from the calculations for all pixels of the gradient fill object, since calculations are necessary in order to perform a comparison (column 3, lines 54-63 of Alves). The gradation occurs in a variety of directions, depending upon the relative orientation of the sun (column 4, lines 5-8 of Alves). This would include the vertical direction, such as for certain oblique incidences upon a flat roof of a building.

Alves does not disclose expressly that said replication means copies said gray level values in number equal to the detected number of pixels.

Takahashi discloses that said replication means copies rainbow pattern pixel values in number equal to the detected number of pixels (figure 5e; and column 10, lines 5-12 of Takahashi). Rainbow pixel varies replace selected blank regions (figure 5e and column 10, lines 5-12 of Takahashi) for every row and column of pixels (figure 5e and column 7, lines 27-35 of Takahashi).

Alves and Takahashi are combinable because they are from the same field of endeavor, namely image formation and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to replicate pixels of a pattern in number equal to the detected number of pixels, as taught by Takahashi, in the vertical direction with said pattern being a gradation pattern, as taught by Alves. The

motivation for doing so would have been to recreate the image with the stored pattern (column 6, lines 31-39 of Takahashi) since the captured image pattern does not exactly correspond with the pattern that is stored (column 3, lines 54-59 of Alves). Therefore, it would have been obvious to combine Takahashi with Alves to obtain the invention as specified in claims 3 and 7.

Allowable Subject Matter

5. Claims 4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 10-12 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 recites "in each pixel group belonging to the plurality of pixel groups, draws a first pixel belonging to each respective pixel group at a gray level value and replicates the gray level value of the first pixel for all pixels belonging to each respective pixel group." Claim 8 recites the same limitations, but in method format. Examiner has been unable to find in the prior art a method or apparatus which performs the recited limitation.

Claim 10 recites specifically judging whether or not a gradient fill object has gradation in either the horizontal or vertical direction and then drawing the object by replicating a pixel with a gray level value for pixels having substantially

the same gray level value in a horizontal or vertical direction. Examiner has been unable to find these specifically recited limitations in the prior art.

Claims 11 and 12 are more specific that claim 10 in that said claims specifically recite judging and replicating in only a horizontal direction (claim 11), or in only a vertical direction (claim 12). Examiner has been unable to find these specifically recited limitations in the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

JAT
12 April 2005

THOMAS D. LEE
SUPERVISORY EXAMINER